Draft Sample Monitoring Report:

Project Name: Wetland Fill Corporation
Corps Permit number: 199212345
Project Location: Maple Grove, CT, Mitigation Site 5B
Monitoring Report Prepared By: Mitty Gayshun, Gayshun Consulting, Inc.
Date Monitoring Report Prepared: November 15, 1994
Date Construction Completed: Grading: 5/30/93; Planting: 9/15/93
Inspection Dates For This Year's Report: 4/2/94, 8/20/94
Monitoring Report: 1 of 3

Introduction:

The Wetland Fill Corporation received a Section 404 permit from the Corps in 1993 to fill approximately one acre of forested/scrub-shrub wetlands in the floodplain of the Soho River. As compensatory mitigation for this impact, the Corporation created approximately one acre of forested/scrub-shrub wetlands at the edge of a nearby farm field also located in the floodplain of the Soho River. The functions and values to be provided at this site were wildlife habitat (shelter, nesting, and food source) for songbirds and small mammals, 15 acre-feet of flood storage, and sediment and toxicant retention. The site was constructed as follows: a) the entire site was excavated approximately 2-4 feet, to the elevations shown on the mitigation plan; b) the entire site was top-dressed with not less than 6" of topsoil from the project impact area, which was found to contain no invasive species that might contaminate the site; c) the entire site was seeded with the Mitigation Wetland Seed Mix Number Three from the Mitigation Wetland Seed Mix Company. This seed mix is shown on the mitigation plan and consists mainly of sedges, rushes, and wetland forbs, all native to the Northeast; and d) the entire site was planted with 450 native wetland trees and shrubs, some planted in clumps, and some scattered throughout the site. The grading of the mitigation site began on March 30, 1993 and the plantings were completed by September 15, 1993.

After one full growing season, the site is currently functioning as a scrub-shrub and wet meadow wetland with moderate wildlife use by deer, songbirds, and turtles. In addition, the flood storage capabilities are functioning as designed. The designed sediment and toxicant retention functions are not yet performing well since the site is not yet diverse or densely vegetated enough to hold sediment in place and take up toxicants coming from the nearby farm field. At this point, it is too early to determine whether or not the intended wetland hydrology extends throughout the entire one acre mitigation site. The northern edge of the site appears to be a bit drier than the rest of the site,

judging by the herbaceous vegetation which has colonized the area so far. Various sedges and rushes have colonized most of the site, but the northern area consists mainly of clover and grasses. This area is approximately 5,000 square feet and will be watched carefully next year to determine its wetness compared to the rest of the site.

This report summarizes the results of the first year of mitigation monitoring as required by Special Condition number 3 of the Corps permit. The next report will be submitted by December 15th of 1995. Due to increased hydrophytic species density and diversity expected during the next year's growing season, the next report will most likely show increased wildlife use, maintenance of flood storage capabilities, and increased ability of the site to retain sediments and toxicants coming from the nearby farm field.

Success Standards:

1) Do at least three-quarters of all planting cells at each mitigation site have at least 35% planting survival? Yes

Planting cells	Number planted	Yr.1 number survived	Yr. 2	Yr. 3	% species survival	>35% species survival
Cell 1 (*Acer rubrum*)	50	33			66	X
Cell 2 (*Alnus rugosa*)	50	45			90	X
Cell 3 (*Sambucus canadensis*)	50	12			24	
Cell 4 (*Vaccinium corymbosum*)	50	28			56	X
Cell 5 (*Acer rubrum*)	50	41			82	X
Scattered *Viburnum recognitum*	50	49			98	X
Scattered *Cornus amomum*	50	35			70	X
Scattered *Ilex verticillata*	50	47			94	X
Scattered *Clethra alnifolia*	50	8			16	

Cells with >35% Survival = 7/9 = 78%

2) Does each mitigation site have at least 80% areal cover, excluding planned open water areas, by noninvasive hydrophytes? Yes

3) Are common reed (*Phragmites australis*) and purple loosestrife (*Lythrum salicaria*) plants at each mitigation site being controlled? Yes

4) Are all slopes within and adjacent to each mitigation site stabilized? Yes, by the end of the season

Summary of monitoring inspections this year:

The wetlands environmental consultant for this project, Ms. Mitty Gayshun, visited the site on April 2, 1994 and observed *Phragmites australis* and an erosion problem on the northeast portion of the site. Ms. Gayshun again visited the site and treated the *Phragmites* by wicking an herbicide on the stems of the plants on August 20, 1994. The *Phragmites* had spread slightly, but the erosion problem had been stabilized by volunteer species.

Remedial actions done this year:

The *Phragmites australis* stand was treated with an herbicide to meet success standard 3.

The local police department was notified of regular illegal use of the site by ATVs. A fence was also put up on the main approach into the site to inhibit ATV access.

Vegetation cover estimates:

1) Percent vegetative cover: 100%,

2) Percent cover of invasive species: 20% cover total invasives (5% *Phragmites australis,* 0% *Lythrum salicaria*, 15% *Typha* sp., 0% *Phalaris arundinacea*).

Fish and wildlife use:

Deer	feeding, shelter
Songbirds	feeding, nesting
Spotted Turtle	unknown, but perhaps shelter

Description of health and vigor of plantings and prognosis of future survival and diagnosis of cause of morbidity or mortality in each planting cell:

Acer rubrum, Virburnum recognitum, Cornus amomum, and Alnus rugosa plantings are growing and fruiting. These are expected to survive. The *Sambucus canadensis* is declining rapidly throughout the site. It is unlikely that any will survive the winter. *Vaccinium corymbosum* and *Ilex verticillata* did not show any signs of new growth last year, but this year buds and fruiting

structures appeared on many of the shrubs. Most of these are expected to survive. The scattered shrub plantings are doing well, except for the *Clethra alnifolia*, which is rapidly dying off. The long term prognosis for the plantings is that *Acer rubrum*, *Alnus rugosa*, *Viburnum recognitum*, and *Cornus amomum* will spread throughout the site, *Sambucus canadensis* and *Clethra alnifolia* will die off altogether, and *Vaccinium corymbosum* and *Ilex verticillata* will slowly come back and form a stable component of the vegetative community at the site.

The cause of the *Sambucus canadensis* decline appears to be overbrowsing by deer such that the buds and new shoots have been entirely removed from the plants. The *Clethra alnifolia* decline may be related to its sensitivity to direct sunlight, since it is commonly a forested understory species. This species is commonly planted in forested wetland creation sites because it is commonly found in forested wetlands. Due to similar findings at other mitigation sites with which the consultant has been involved, she recommends that *Clethra alnifolia* not be planted in future forested wetland creation sites, except along the north side of an existing forested area which will provide the shade this species appears to need. The *Vaccinium corymbosum* and *Ilex verticillata* declines appear to relate to stress from the replanting, since they are now rebounding with fresh growth.

Recommendations for future remedial activities:

The stand of *Phragmites* should be treated next year, if necessary, before it spreads any further into the site. Ms. Gayshun's recommendation is to continue to wick the *Phragmites* plants individually with an herbicide. The Corps will be notified in advance of this effort in case they would like to be present during the application.

Appendices:

Appendix A: Copy of permit's special conditions.
Appendix B: As-built planting plan showing the location and extent of the designed plan community types.
Appendix C: Vegetative species list of dominant volunteer species in each community type.
Appendix D: Representative photos of the mitigation site taken from fixed locations.